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Leadership for the Nineties: Development of Training and Research Instruments

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Research has demonstrated that small-unit cohesion bears a strong positive relationship to small-unit combat performance and resistance to combat stress. Similarly, personnel turbulence, which negatively affects small-unit integrity and leader-led stability, has been shown to erode cohesion, resulting in a reduction of soldier performance. This report integrates historical and recent research literature to document the relationship among cohesion, performance, and personnel turbulence and to investigate the effect of leadership training and division-level policies concerning soldier assimilation and integration on cohesion in a newly activated COHORT battalion. Survey instruments administered to members of both COHORT and non-COHORT battalions confirmed the three-dimensional factor structure of cohesion cited by previous researchers: horizontal, vertical, and organizational bonding. Analyses of the data at both individual and squad levels indicate that cohesion is significantly and consistently correlated with psychological readiness (for combat), a construct also measured by the survey.

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FOREWORD

The positive effect of cohesion on combat performance was first systematically documented during World War II. Units with higher levels of cohesion were characterized by consistently higher performance in battle. A combination of factors has increased the importance of cohesion, with leadership (of which military cohesion is a product) as a combat multiplier. Among them are the increasing lethality of the mid- to high-intensity battlefield, which demonstrably increases nonwound casualties, and the decreasing size of the pool from which combat replacements are drawn. Aside from the high value placed on life in the American culture, these factors mandate that the leadership be concerned with enhancing cohesion as one means of achieving higher levels of combat efficiency while at the same time conserving life to the maximum extent possible.

The LEADER 90 research project addresses issues of personnel turbulence, policy, and small-unit leadership--all of which either directly or indirectly affect cohesion development. This project will produce two reports. This report describes the overall effort, the data collection instruments, and the leader training believed crucial to the development of vertical cohesion.

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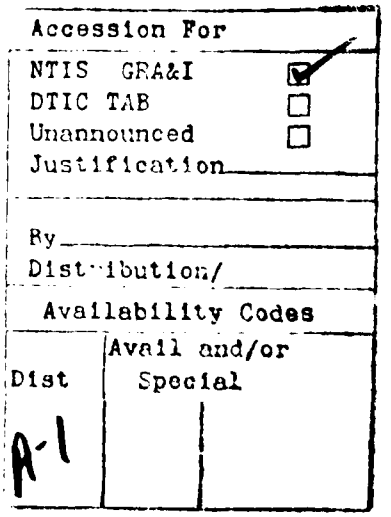

LEADERSHIP FOR THE NINETIES: DEVELOPMENT OF TRAINING AND RESEARCH INSTRUMENTS

EXECUTIVE SUMMARY

Requirement:

Small-unit cohesion is of great concern to the Army because of its demonstrated relationship to small-unit combat performance and individual resistance to combat stress. Research on factors that either enhance or inhibit its development consequently contributes to small-unit combat effectiveness. Personnel turbulence that unnecessarily affects small-unit integrity and leader-led stability are of concern because they have been shown to erode cohesion--resulting in a reduction of soldier performance and morale. The purpose of the present effort was two-fold: First, to integrate historical and recent research literature documenting the relationship among cohesion, performance, and personnel turbulence; and second, to investigate the effect of leadership training and division-level policies concerning soldier assimilation and integration on small-unit cohesion in a newly activated COHORT battalion.

Procedure:

Two major experimental interventions were planned. The first was to be company chain-of-command leadership training and the second, a set of division-level policies calculated to enhance small-unit member and leader-led stability. Both were to be used with a newly filled COHORT battalion. The leadership training was designed to build the leadership skills required to assimilate a full battalion "fill" of soldiers who had just completed Initial Entry Training (IET). It consisted of 10 modules lasting 40 hours, focusing on soldier assimilation and integration into the unit, goal setting, and planning. The course was administered to 105 cadre members of a newly activated COHORT battalion in September 1987. The second experimental intervention, institution of division-level policies calculated to enhance small-unit member and leader-led stability, did not occur because the recommended policies were never instituted by the division.

Historically, soldiers going to COHORT units have shown high levels of motivation, attraction to the Army, and cohesion. In some COHORT units, these initially high levels were maintained; in many more, they declined over a period of 18 to 24 months to

levels typically found in conventionally manned units. The experimental comparisons in the present research thus were twofold. First, survey instruments measuring these variables were administered at 6-month intervals for a 2-year period, permitting comparison with the existing historical data bases. Second, comparison data were collected from a non-COHORT sister battalion in the last three data collections of the 2-year period.

Two survey forms were used. In March 1988, the Platoon Cohesion Index (PCI) was administered to 319 soldiers from the original COHORT battalion. It consisted of 31 items to assess cohesion, personnel turbulence, and career intentions. In July 1988, the Soldier Survey (SS) was administered to 223 soldiers from the same COHORT battalion and 322 soldiers from a non-COHORT battalion stationed in the same location. It included the 31 items from the PCI as well as 80 Psychological Readiness (for combat) items.

Cronbach's alpha was used to calculate reliabilities at both composite and subscale levels. Principal component factor analyses using varimax rotation were performed to verify the structure of the instruments.

Findings:

Both the PCI and SS were shown to be highly reliable (alpha = .88 and .86, respectively). Reliabilities for the Psychological Readiness and Cohesion subscales were .90 and .93, respectively.

The factor analysis of the 20 cohesion items yielded three independent factors: Horizontal Bonding, Vertical Bonding, and Confidence in Unit and Leaders (Organizational Bonding).

Fifteen psychological readiness (for combat) factors emerged. The first factor loaded items representing general readiness, which accounted for the majority of the variance (29%).

Composite variables were computed for each of these 18 factors by taking the mean of the items loading higher than .5 on each factor. Data analyses used these scores rather than individual items or computed factor scores. These analyses are presented in the second report of this project.

The three cohesion composites were intercorrelated using the March 1988 COHORT data. All three intercorrelations were highly significant at both individual and squad levels. Both the pattern and magnitude of the squad-level correlations were supported by individual-level data. At squad level, Horizontal and Vertical Bonding were moderately correlated ($r = .49$, $p < .001$).

Correlations between Horizontal and Organizational Bonding and between Vertical and Organizational Bonding were quite substantial ($r = .53$ and $.73$, respectively; $p < .000$).

Paired correlations between the three cohesion composites and the 15 psychological readiness composites were calculated using the July COHORT data. All 45 correlations were highly significant with magnitudes ranging from moderate to substantial.

Utilization of Findings:

The findings from this research have been briefed to the Director of Military Personnel Management, Office of the Deputy Chief of Staff for Personnel, Department of the Army (ODCSPER, DA). They show that current soldier management within units is based on policy and leadership philosophies that generally work against development of cohesive small units and thus limit probable combat readiness. These results, together with those in the second report, can be used to design a policy perspective for division-level implementation that will enhance rather than work against combat readiness.

LEADERSHIP FOR THE NINETIES: DEVELOPMENT OF TRAINING AND RESEARCH INSTRUMENTS

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LEADERSHIP FOR THE NINETIES: DEVELOPMENT OF TRAINING AND RESEARCH INSTRUMENTS

The present report is the first of two reports that document the LEADER 90 Project. It has two aims. First, it documents the historical bases for: (a) considering cohesion as a principal requirement for successful combat performance, and (b) considering cohesion, both horizontal and vertical, within the context of its relationship to personnel turbulence. It concludes with a summary description of the project's genesis through the July 1988 interim data collection. Second, it presents a detailed account of the development and testing of the tools used to assess the key constructs of cohesion and personnel stability.

Results from periodic data collections (March 1988 to August 1989) using these refined instruments are presented in the second report.

PART I: AN OVERVIEW

COHESION: Historical Definitions and Measurement

The practical importance of cohesion in army units has been documented extensively since its pervasive breakdown during the Vietnam years (U. S. Army War College, Carlisle Barracks, 30 June 1970; U. S. Army War College Study of Leadership for the Professional Soldier, 20 October 1971; Moskos, 1975). It has been viewed as a "force multiplier" to balance American-Soviet inequalities in Europe (ARCOST Analysis Team, 1980); and, in general, as a means to foster and sustain those soldier behaviors considered necessary for survival in a more accelerated and lethal future war (Manning and Ingraham, 1983).

In their historical review of the literature on wartime psychiatric casualties, Ingraham and Manning (1980) asserted that the probability of relapses among "recovered" soldiers is greatly increased when they are not returned to their original units or when they are shipped to new units individually rather than as members of a team. Based on the documented experiences of soldiers in the Second World War, Korea, and in the Israeli Defense Force (IDF), they concluded that psychiatric battle casualties are more a function of group than individual personality characteristics. This is an important point given that the psychiatric "breakdown" rate in combat rises in proportion to the wounded casualty rate. In an unrelated study of personnel attrition in Europe during April 1978, Manning and Ingraham (1981) observed that soldiers who left the command prematurely were characterized by a lack of cohesion with their peers, leaders, and units and by a lack of job involvement.

They concluded that systemic factors--lack of unit cohesion and frequent leader rotation rather than personal factors--accounted for the majority of discharges.

Despite their interest in cohesion, researchers and policy-makers alike have failed to agree on the meaning of the term, often confounding it with other related constructs like "esprit" and pride (See Oliver, 1987 for a review). However, they agree that classic social psychological definitions of the construct which stress mutual attraction or "liking" (e.g. Festinger, Schacter, and Back, 1950; Lott and Lott, 1965) are not adequate for a military context. Most military definitions identify commitment as one of the motivating forces propelling soldier bonding (e.g. Etzioni, 1975; Action Planning Group, 1979; ARCOST Analysis Team, 1980; Johns et. al, 1984).

Recent studies of military cohesion have explored the likelihood that the construct is not unidimensional. These are grounded in the earlier objections of some social psychologists to Festinger's "nominal definition" of the term (e.g. Eisman, 1959; Gross and Martin, 1952). Albert (1953), while opposed to Gross and Martin's focus on operational definitions, concluded that "Perhaps what is most needed at present is the determination conceptually of the constituent parts of the concept ...." Ingraham and Manning (1981) noted the interdependence of at least two types of cohesion. They asserted that good vertical communication is needed in addition to horizontal bonds of strictly peer cohesion in order to foster commitment to group goals.

Many researchers now propose a tripartite structure of cohesion which consists of horizontal, vertical and organizational bonding components (e.g. Hauser, 1980; George, 1971; Griffith and Chopper, 1986). Etzioni (1975) labeled these peer cohesion, hierarchical cohesion and personal integration to describe relations between co-equals, relations between superiors and subordinates and the degree to which the organization satisfies personal values, attitudes and behaviors. Piper, Marrache, Lacroix, Richardson, and Jones (1983) also suggested that several types of (cohesive) bonds may exist in a group: between members, between a member and a leader and between a member and "his conception of the group as a whole" (p. 95). Marlowe et al. (1987) wrote that "Cohesion expresses the bonding soldiers have with each other, with their leaders, and with their unit" (p. 8). Stewart (1988), in her post-hoc analysis of British and Argentine soldier behavior during the South Atlantic Conflict of 1982, concluded "Thus we see that the soldier is bonded to his peers, to his subordinates and superior officers and to the principles of the nation as well. Cohesion, therefore, is a multi-dimensional concept" (p. 25).

Siebold and Kelly (May 1987) further differentiated these three dimensions into affective and instrumental subtypes. Similarly, Griffith (October 1987) devised a two-dimensional scheme in which cohesion could be depicted according to both direction (horizontal or vertical) and function (instrumental or affective).

Cohesion and Performance

The structure of the cohesion construct is of interest to military researchers because of its demonstrated utility for enhancing soldier performance. The literature has numerous references to its positive effects in situations of both present and anticipated combat stress (e.g. Ingraham and Manning, 1980; Gal, 1983). Henderson (1985) specified several positive effects: increased resistance to battle stress, higher retention rates and enhanced performance. He asserted that these qualities largely explained the combat resiliency of North Vietnamese soldiers during the Vietnam War. Conversely, he attributed the high frequency of combat breakdown among U.S. troops stationed in Vietnam to their lack of cohesion. Marlowe et al. (1987) assert that "... cohesion is the foundation of soldier power--the synergistic combination of concerned, competent leaders and well-trained soldiers which will make light infantry forces uniquely effective" (p. 6). Similarly, Stewart (1988) concluded: "Cohesion impinges on every aspect of a military operation's success or failure" (p. 109).

However, empirical validation of the relationship between cohesion and performance is made difficult by peacetime lack of access to a good surrogate for (or an acceptably logical predictor of) combat performance. Despite this difficulty, the research does offer a picture of how cohesion may relate to various indices of combat performance.

As part of their classic study of the American soldier in World War II, Stouffer et al. (1949) surveyed U.S. soldiers eight weeks after they had participated in the Normandy invasion. They identified two main functions of group cohesion: (a) setting and enforcing standards of behavior and (b) supporting and sustaining individuals under extreme stress. Other data collected independently in World War II and later made available corroborated their conclusions. American airborne units lacking in cohesion experienced a higher ratio of combat stress to wounded-in-action casualties (22.7% to 34%) than did more cohesive units (5.7% to 2%) (Department of Army Pamphlet No. 350-2, 1982).

Hemphill and Sechrest (1952) observed that bomber crews who made more within crew choices for future combat missions over Korea had more accurate bombings than those who appeared to respond primarily to external control. Goodacre (1953) compared the cohesiveness of a subsample of squads which had ranked either highest or lowest on a 6-hour blank fire field exercise. He observed that high performing squads were both more instrumentally cohesive (e.g. had

fewer disagreements over how the field problem was to be solved) and affectively cohesive (e.g. spent more off-duty hours with squad members).

Nelson and Berry (1968) recorded changes in the cohesion of Marine Corps recruits over an eight-week period. Their finding that performance measures and cohesion were unrelated is tempered by the fact that, like many of the social psychological studies, they operationalized cohesion as reciprocity of dyadic liking. Conversely, Manning and Trotter (1980) used multiple outcome measures and found strong positive correlations between cohesion and garrison performance. Manning and Ingraham (1983) related cohesion to several measures of battalion performance for junior enlisted men and company commanders. Battalion performance rankings on the Skill Qualification Test (SQT), the Army Physical Readiness Test (APRT), scores on operational readiness tests, percentage of soldiers receiving Uniform Code of Military Justice (UCMJ) actions and reenlistment rates had moderate, significant correlations with individual cohesion measures.

Oliver (1988a) performed a meta-analysis on cohesion studies, both current and historical, which used identifiable performance outcome measures. She reported a mean correlation of .32 between cohesion and performance across the studies reviewed. In an earlier review of the cohesion-performance literature, Oliver (1987) noted the difficulty of establishing the direction of causality. While cohesion and performance have been repeatedly linked (e.g. Cartwright, 1969), it cannot be determined from existing data whether positive cohesion precedes, antecedes or occurs concomitant with heightened group performance.

A second complication surrounds the issue of data aggregation. Findings from many studies are not directly comparable since they do not use a common unit of analysis. A growing body of evidence suggests that the group rather than the individual is the appropriate unit of analysis. This is based on the premise that, historically, cohesion has been viewed (but not necessarily measured) as a group dynamic. Ingraham and Manning (1981) consider cohesion to be "... a property of primary groups and therefore belongs to the group level of analysis" (p. 6). Henderson (1985) reasoned that the small group level (squad, platoon or section) represents the only appropriate level of analysis since it is the only level at which organizational, primary group and leader factors converge. Oliver (1987) pointed to the paradox inherent in defining cohesion as a group phenomenon while basing the criterion and predictor measures on data from individual subjects. Highest levels of cohesion have been found in small, more autonomously operating units (e.g. Janowitz and Little, 1965; Gal, 1983). Significant correlations between cohesion and performance have been stronger when cohesion scores were based on company or battalion aggregates rather than on individual measures (Motowildo and Borman, 1978; Manning and Ingraham, 1983). Sterling and

Williams (1982) aggregated responses to their cohesion instrument at four hierarchical organizational levels. They found that the cohesion-performance relationship was maximized when examined at smaller unit levels of squad and platoon rather than at company and battalion. Oliver (1988b) also seems to suggest that aggregating soldiers at lower organizational levels (e.g. platoon) may be preferable to either individual or battalion levels. She found positive correlations between cohesion and ratings of platoon field and garrison performance for two COHORT battalions.

Cohesion and Turbulence

Evidence for a negative relationship between personnel turbulence and combat performance is less tenuous than that in support of a positive relationship between cohesion and combat performance. While adequate and comprehensive measures of performance are still lacking, measures of turbulence (both horizontal and vertical) are straightforward and unequivocal (Boice and Jacobs, 1988). Henderson (1985) lists unit integrity and stability, the opposites of turbulence, as third among six factors considered to promote small-unit cohesion.

Boice and Jacobs (1988) defined personnel turbulence as the movement of personnel both within and between units. In addition to the external turbulence or officially reported turnover rate, internal turbulence involves position changes initiated by the local command to fulfill local requirements. (PERSCOM-directed moves account for less than half of the actual position changes that occur.) Reviewing a number of studies, they estimated that actual individual turbulence is between two and three times the battalion turnover rate reported in the monthly Unit Status Report (USR). Practically, this means that "... for every soldier who departs the battalion, two to three soldiers experience a job change (internal turbulence) as a result" (p. ii). Consequently, they argue that "turnover" rates, as they are presently calculated, underestimate actual turbulence. This is consistent with other, independent estimates. Bialek (1977) calculated that, at company level, a reported 24% turnover rate was equated with a 64% rate of personnel turbulence. Wroth et al. (1982) lists turnover as only one of three benchmarks of turbulence, the others being reassignment (the number of reportable changes of position, unit and/or station during a given period) and turnaround (the average length of time an individual remains in a given command, unit or job). The practical implications of present policy assignment are elucidated perhaps most clearly by Henderson (1985) who stated, "There is a 16 percent turnover every three months with a battalion turning over completely in one and a half years and this does not include internal reassignments within battalions ..." (p. 20).

COHORT policy initiatives designed to foster and sustain cohesion have been hampered by the premium that Army culture has traditionally placed on equity in individual career development. The Army's Individual Replacement System (IRS) is cited consistently as the mechanism which produces the noted high levels of turbulence. On a macro level, Griffith (August, 1988) argued that the IRS is an artifact of the American cultural bias favoring independence or "rugged individualism" over interdependence. Continued practice of individual replacement represents a cultural idiosyncrasy rather than an essential ingredient of a successful armed force; virtually all other armies of the world differ in how soldiers are replaced in operational units.

Straub (1988) also faulted the IRS for its over-emphasis on equity for individuals (in the form of individual career development) at the expense of equity, stability and cohesion for units. He identified an inverse relationship between personnel turnover and unit cohesion, stating that " ... these turnover rates are serious because they hinder the development of cohesion. It is in our power to reduce them because they are largely self-inflicted through our personnel system." Wroth et al. (1982) stated, "The individual replacement system is the single biggest cause of turbulence. Therefore, the most direct approach for reducing turbulence would be to shift to a unit manning system for combat arms units" (p 3-1).

Effects of Turbulence on Cohesion and Combat Performance

Policies which sustain turbulence are institutionalized despite the widespread evidence of its negative consequences for combat performance and cohesion. Funk et al. (1980) asked leaders in six FORSCOM divisions from division to company level to identify factors which have a negative impact on combat training. Personnel turbulence, especially of NCOs, was consistently mentioned as a detractor to combat training. Moreover, across company/battery, battalion, brigade and division levels, turbulence was ranked third among a list of 11 detractors. (The first was "low fill" and the second, "individual performance.") Based on performance at The National Training Center (NTC), Holz (1988) asserted that the stability of unit leaders and members is independently related to unit performance.

Other reports agree that, while personnel stability alone may not be sufficient, it is essential to both cohesion and quality performance. Elton (1984) stated that " ... efficiencies in individual replacements take no account of unit cohesion in the tank company, cannon battery or the infantry battalion. Individual replacements result in a constant flow of soldiers into and out of units ... the turbulence inherent in an individual replacement system may diminish unit cohesion and esprit at the cutting edge of the Army." Sorley (1980) underscored the impact of leader turbulence, stating that, "Where the turnover involves leaders,... units are forced to expend enormous amounts of adaptive energy

getting used to the command style and emphasis of each in a constant stream of new commanders. And each new commander takes time to become familiar with the unit's situation and personnel, and to devise his own approach to running it in a professional way, with inevitable loss of momentum and direction while that process takes place over and over again" (pp 77-78).

The more acute future battlefield conditions projected by current U.S. army doctrine (FM 100-5, August 1982) seem to mandate a shift in army values toward fostering and sustaining cohesion. Current mechanical replacement practices work against the values required to build robustness and resiliency under conditions of wide dispersion of forces, high mobility, and high lethality. Both the need for stress-hardiness and adaptable autonomous leadership mandate the development of highly cohesive units capable of functioning as teams over time, rather than aggregates of disparate individuals.

The New Manning System (NMS) was created to meet these projected needs by managing and reducing the high levels of personnel turbulence considered to disrupt soldier bonding.
The NMS assigned, trained and deployed soldiers as intact groups during their first three-year enlistment period. It was based on four basic precepts: personnel stabilization, unit rotation, home-basing and regimental affiliation. A refined version of the NMS, called the Unit Manning System (the UMS) was approved by the previous Army Chief of Staff in October 1986. The main goal of this UMS was the creation of a peacetime replacement system that would support the transition to war and to a wartime replacement system (DA Message No. 171637Z, Nov. 1986).

The Cohesion, Operational Readiness and Training (COHORT) Unit Movement System represents one major component of the UMS (the other being the US Army Regimental System). While COHORT initially enhances horizontal bonding by reducing or eliminating soldier turbulence, it has no effect on vertical bonding since it does not control personnel turbulence at the leadership level. Boice and Jacobs (1988) asserted that since Army strength management is a product of Army culture, Army culture must be changed if it is to preserve the values that COHORT was intended to foster. "The goal is not necessarily to <u>eliminate</u> turbulence. Admittedly, the opposite of turbulence is stagnation which would be neither achievable nor desirable. A far more reasonable goal is to be able to <u>manage</u> the level of turbulence" (p. 21).

PART II: IMPLEMENTATION

The LEADER 90 Project

The Leadership for the Nineties project was initiated by ODCSPER in the spring/summer of 1987 to enhance the efficiency of COHORT in fostering, enhancing, and assessing small-unit cohesion. Cohesion was defined on two levels: a bonding together of soldiers with one another (horizontal), and of soldiers with their leaders (vertical), based on mutual respect and commitment to one another and to the professional performance of duty.

The project was based on data collected and reported by both Walter Reed Army Institute of Research (WRAIR) and The Army Research Institute (ARI), during previous field work with a Light Infantry Division. The research plan was straightforward. It called for a longitudinal to assess the effectiveness of two treatments: (a) a leadership training program for intact company chains of command, specifically focusing on replacement assimilation and integration and (b) implementation of policy initiatives designed to enhance small unit and leader-led stability. Small unit personnel stability, training, and leadership development were targeted as essential elements of both cohesion enhancement and sustainment.

In order to eliminate subject contamination by previous experience, a "kick-start" COHORT battalion was used as the experimental group. The battalion was scheduled to graduate its soldier fill from One-Station Unit Training (OSUT) in October 1987 and to activate as a battalion in November 1987. A sister battalion operating with an Individual Replacement System and historical data served to provide statistical comparisons.

Hypotheses

In previous work with a variety of other COHORT units, the following consistent findings have been obtained: (a) horizontal bonding either held constant or declined, apparently depending on unit leadership factors; (b) vertical bonding declined substantially; and (c) organizational bonding declined substantially. It was theorized that these declines were attributable in part to small-unit leader turbulence, and in part to observed small-unit leader skill deficiencies.

It was assumed that leader skill training could be developed to correct the skill deficiencies, particularly those concerned with assimilation and integration of replacements. However, it was also assumed that leader skill training would be effective only so long as the trained leaders remained in place and had a chain of command supportive of the new skills. Hypotheses thus were:

- Skill training, if conducted with intact chains of command, will produce an initially increased frequency of occurrence of the skills taught.

- In units given skill training, horizontal and vertical bonding will remain at levels matching baseline data in OSUT.

- If unit leader-led turbulence is low, horizontal and vertical bonding will remain high, and vertical bonding will be significantly higher at the end of the second year following training than in comparison units with an individual replacement system. (This extended period was selected because of consistent findings in the literature that declines in cohesion in units with personnel turbulence generally become significant 12 to 18 months following activation e.g. Bartone and Kirkland 1989).

- If unit leader-led turbulence is high, vertical bonding will not be significantly different from that in other COHORT units in a historical data base or in comparison units with an individual replacement system; horizontal bonding will be higher than in comparison units with an individual replacement system.

The historical data base contains longitudinal data from a variety of both COHORT and non-COHORT units, from research conducted over the past eight years. The comparison unit is a sister battalion in the same brigade as the COHORT battalion furnishing the data for the present experiment. Data were systematically collected from both.

Method

The Leadership for the Nineties Training Course

The LEADER-90 course consisted of 10 modules designed to develop leader skills in the following areas: receiving replacements, integrating replacements into a unit structure, setting unit goals, determining accountability for performance, and problem solving. The titles of the modules are shown in Figure 1 below. Based on the extensive leadership research literature, it was assumed that increasing leader skills in these areas would both foster the development of vertical bonding, and create a context in which horizontal bonding would develop naturally. The course design called for approximately 40 hours (5 days) of classroom participation. Modules were ordered sequentially to foster progressive skill building based on structured learning through experience. For each module, the instructor presented the topic

skill and then gave student groups a work-related situational context in which to apply what they had learned.

The Platoon Cohesion Instrument (PCI)

The Platoon Cohesion Instrument (PCI) is a 31-item questionnaire designed to measure both cohesion and stability. The first 20 items measure cohesion, using a 5-point Likert scale from "strongly agree" to "strongly disagree." The next 10 items assess the degree of stability or turbulence existing at both horizontal (peer) and vertical (leader) levels (number of rotated squad leaders, platoon leaders, et cetera). The final item, "Career Intentions," asks soldiers to project how long they intend to remain in the Army (choosing among five options ranging from "until retirement" to "leave before completion of my present obligation.")

The Soldier Survey (SS)

The Soldier Survey (SS) is a four-part 123-item questionnaire designed to assess various aspects of soldiers' perceptions of both their own and their unit's psychological readiness for combat, unit cohesion (both horizontal and vertical--using scales developed by the Walter Reed Army Institute of Research), turbulence, and personal career intention. Part I consists of 12 multiple choice demographic items that ask soldiers to report:

- their grade level (Items 1 through 3)
- battalion, company, platoon and squad memberships (Items 4 through 7)
- marital status (Item 8)
- living situation (Item 9)
- type of housing (Item 10)
- estimated daily work hours (Item 11), and
- predictability of duty schedule (Item 12)

The remaining 111 items are framed in a Likert scale format. In Part II (Items 13 through 73), soldiers are asked to express the degree to which each statement characterizes the psychological combat readiness of themselves and/or their unit based on a 5-point Likert scale ("strongly disagree" to "strongly agree"). Part III includes two multiple choice items asking soldiers to describe officer-enlisted relationships in their unit (Item 74) and to describe the condition of their unit's major weapons systems (Item 75). The five response options range from "Very good" to "Very bad." Items 76 to 92 focus more specifically on soldiers' confidence in the combat readiness of their squad, company, battalion, brigade, division, corps. Responses reflect a 5-point scale (ranging from "very high" to "very low").

Part IV, the last 31 questions, (Items 93 to 123) form the Platoon Cohesion Index/Instrument (PCI) described above. Appendix 2 lists the corresponding item numbers for the 31 PCI items as

given in March and as given in embedded form in the SS in July. Item numbers referred to in the text reflect the SS sequence.

Data Scoring

For the PCI, scoring for the first 20 items was reversed so that item means could be interpreted as positive indices of cohesion. Among the stability items, questions 113 through 115 and 122 were not reversed since the scoring already reflected a positive valence. Items 116 through 121 were reversed so that high means would represent more stable leadership. Finally, the scoring for Item 31 "Career intentions" was reversed so that item means would reflect the longevity of military commitment.

For the SS, items were scored from 1 to 5 with 1 indicating a low level or absence of a particular (positive) attribute (i.e. psychological readiness, cohesion, stability, long-term career intentions) and 5 indicating a high level of that attribute. The same logic was applied to those items with only four response options. The scoring key for all of the items in Part III (74 through 92) was reversed to reflect a positive valence. For Part IV (the PCI), scoring for the first 20 items was reversed so that item means could be interpreted as positive indices of cohesion. Among the Stability items, questions 113 through 115 and 122 were not reversed since the scoring already reflected a positive valence. Items 116 through 121 were reversed so that high means would represent more stable leadership. Finally, the scoring for Item 123 "Career intentions" was reversed so that item means would reflect the longevity of military commitment.

Sample and Procedure

In September 1987, 105 members of the newly activated COHORT battalion participated in the 10 module training course. Because of short deadlines for course development, this initial administration served as both the experimental treatment and a field test of the training program. (Based on their feedback, the training was subsequently modified and the modules reordered to correspond to students' suggestions).

In March 1988, the PCI was administered to 319 members of the COHORT battalion. The Soldier Survey (including the embedded PCI items) was administered to 628 members of both the COHORT and non-COHORT battalions in July 1988. Of these, 545 had identified themselves as belonging to either COHORT (N = 223) or non-COHORT (N = 322) battalions. In the COHORT sample, 3 were identifiably company-grade commissioned officers, 32 were non-commissioned officers assigned as cadre, and 188 were first-term soldiers. The two battalion samples did not differ significantly in composition.

Results

Reactions to Leadership Training

Ratings were obtained from 76 chain-of-command attendees. Student reactions to the training were positive, as shown in Table 1.

Insert Table 1 here.

No one rated any one of the course modules as "Totally ineffective" and virtually no one rated them as "Ineffective." The bulk of responses fell into the "Adequate" and "Very Effective" categories. Further, as the course progressed toward integrating more primary skills (e.g. self knowledge) into more complex relational contexts (e.g. action planning), ratings shifted from "Adequate" to "Very Effective." The majority of students rated Modules 8, 9 and 10 as "Very Effective" (63%, 57% and 61%, respectively). Moreover, 96% said that they would recommend others to take the course.

Similarly positive course evaluations were obtained one year later (November 1988) from 16 cadre members of a Light Fighter School who also took the course.

Insert Table 2 here.

As shown in Table 2, the majority of their responses also fell into either the "Adequate" or "Very Effective" categories. "Very Effective" ratings predominated in four of the ten modules (Communication Skills; Goal Setting; Role Clarification; and Action Planning). Reactions were evenly distributed between "Adequate" and "Very Effective" for three modules (Leadership/Followship Problem Solving and After-Action Reviews). Role Clarification (Module 6) and Role Relationships (Module 7) appear to have benefitted from their adjacent placement; 81% rated Role Clarification as "Very Effective" and 99% rated Role Relationships as either "adequate" or "very effective." This represented a substantial increase from the September 1987 reactions. One module, Action Planning, was rated as "totally ineffective" by 6%, probably because there was not sufficient time to complete the module in class. As before, the overwhelming majority of respondents (94%) said that they would recommend the course to others.

Scale Reliabilities

Internal consistency reliabilities for both the PCI and SS were obtained using Cronbach's alpha (SPSS-X, Release 2.1.). Reliabilities for the 31-item PCI administered independently in March 1988 (to the experimental battalion only) and in embedded form in July 1988 (to both battalions) were both quite high (alpha = .88 and .86, respectively).

Since the SS was, in reality, an aggregate of disparate measures, reliabilities were also calculated independently for each subscale. Reliability for the 80-item Psychological Readiness subscale and for the 20-item Cohesion subscale were .90 and .93, respectively.

Composite Level Analyses: Computation of Factor Scores

A principal components factor analysis with varimax rotation of 20 cohesion items taken from the March PCI data yielded three discernible cohesion factors. A fourth factor including residual variance was ignored. Principal factor loadings are given in Table 3.

Insert Table 3 here.

Based on this structure, three composite factor scores were constructed for comparison of cohesion components over time. Each composite score is the mean of items loading over .5 on the respective factors. Since all of the cohesion items were scaled from 1 to 5, this range applies to the composites as well.

The SS was also factor analyzed (Varimax Rotation), both at instrument and sub-scale levels. Analyses were initially run separately for the COHORT and non-COHORT battalion. Because the solutions were highly similar, it was decided to combine the sample and re-run the analysis. A factor analysis of the 80-item psychological readiness subscale yielded 15 distinct dimensions. For the most part, a simple factor structure was approximated so that a given item loaded heavily on only one factor. Fifteen psychological readiness (PR) factor scores were computed based on the loadings defining each factor, as was done for the cohesion composites. These are shown in Table 4.

Insert Table 4 here.

Interrelationships among the three cohesion factors and between the cohesion factors and psychological readiness factors were calculated using the March and July COHORT data.

Insert Table 5a here.

Table 5a shows the intercorrelations for the three cohesion factors using the March 1988 data. All three cohesion components were significantly interrelated. Vertical and Organizational Bonding had the strongest relationship, sharing approximately 49% of the variance.

Insert Table 5b here.

Based on the rationale that cohesion is inherently a group dynamic, the data were aggregated at squad level. The resulting squad level intercorrelation matrix is shown in Table 5b. Clearly, all three intercorrelations remained substantial and significant despite the decrease in power resulting from aggregation.

Table 6 depicts interrelationships between cohesion and psychological readiness based on the responses of COHORT soldiers to the July survey. All 45 correlations were highly significant, ranging in magnitude from moderate to substantial.

Insert Table 6 here.

Summary

This report is divided into two parts. In PART I, the literature concerning cohesion, personnel turbulence and their concomitant effects on combat performance was briefly reviewed. A tripartite conception of cohesion consisting of horizontal, vertical and organizational components had been found in the earlier literature, and was hypothesized to be appropriate for the current effort.

Part II described the preliminary implementation of The LEADER 90 Project. This occurred in two phases. First, a 10-module leadership training course was administered to 105 members of a newly activated COHORT battalion in September 1987 based on suggestions in the literature that an increase in leadership skills would directly improve vertical bonding and indirectly facilitate horizontal bonding.

Second, two survey forms, the PCI and SS, were administered in March and July 1988. The PCI consists of 31 items which measure cohesion, turbulence and career intentions. Reliability for the 31-item PCI (alpha = .88) was based on the responses of 319 COHORT soldiers. The SS consists of 123 items delineated into three subscales: Psychological Readiness (for combat); Cohesion (Horizontal; Vertical; Organizational); Turbulence (Small Unit Integrity and Leader-Led Stability). The last 31 items are the PCI discussed above. Using the pooled COHORT and non-COHORT July samples, the reliability of the SS as a whole was quite high (alpha = .86) as was that for the Psychological Readiness and Cohesion Subscales (alpha = .90 and .93, respectively).

Items from the Psychological Readiness and Cohesion subscales of the SS were each submitted to principal components analysis using varimax rotation. Three factors were identified in the cohesion subscale: Horizontal, Vertical and Organizational Bonding. This confirmed the earlier theoretical formulation of Etzioni (1975), but not the more fine-grained breakout into affective and instrumental sub-components found by Siebold and Kelly (1987). A total of 15 psychological readiness factors was identified in the Psychological Readiness subscale. This factor structure was substantially different from research by Marlowe (1986) who found fewer factors. However, comparison of the two sets of factors (not presented in the body of this report) did not provide any obvious reasons for the differences. Based on these dimensions, composite cohesion variables and psychological readiness variables were computed by taking the mean score of the principal items loading on each factor.

Intercorrelations between horizontal, vertical and organizational bonding were calculated at both individual and squad levels using the March COHORT data. All three were significantly related, with the vertical-organizational bonding correlation

proving the most substantial at both individual ($r = .67$ $p<.000$) and squad levels ($r = .73$ $p<.000$).

A pattern of significant interrelations between cohesion and psychological readiness was also demonstrated using the July COHORT data. All possible correlations were highly significant. The magnitude of these relationships ranged from moderate to substantial.

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APPENDIX 1

SOLDIER SURVEY

PART I

GENERAL INFORMATION

First, we need a few facts about you. Please answer the questions below by circling the letter on the answer sheet that is appropriate.

1. You are:

   a. Commissioned
   b. Warrant
   c. Enlisted (Go to Item 3)

2. Your (Commissioned/Warrant) grade is:

   a. O1
   b. O2
   c. O3
   d. O4
   e. O5
   f. WO1
   g. CWO2
   h. CWO3
   i. CWO4

   Go now to Item 4

3. Your (Enlisted) grade is:

   a. E1
   b. E2
   c. E3
   d. E4
   e. E5
   f. E6
   g. E7
   h. E8
   i. E9

4. Your battalion is:

   a. 4th/9th INF
   b. 5th/9th INF

5. Your company is:

   a. A
   b. B
   c. C
   d. D
   e. HHC

6. Your platoon is:

a. first
b. second
c. third
d. scouts
e. anti-tank
f. mortar
g. medical
h. support
i. other

7. Your squad or section is:

a. first
b. second
c. third
d. fourth

8. Your present marital status:

a. Never married
b. Divorced
c. Separated
d. Widowed
e. Currently married (Go to question 9).

9. If you are "currently married," is your spouse with you in XXXX?

a. yes
b. no

10. Where do you live?

a. In the barracks
b. On-post housing
c. Off-post housing

11. How many hours in a week do you <u>usually</u> work, not counting the time to go from where you live to your unit.

a. 40
b. 41-45
c. 46-50
d. 51-55
e. 56-60
f. More than 60

12. How often do you come home from duty at the time that you expected?

a. Never
b. Seldom
c. Sometimes
d. Most of the time

PART II

Answer questions 13 through 73 using the response set below.

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
a	b	c	d	e

13. My superiors make a real attempt to treat me as a person . . . . . a b c d e

14. My platoon sergeant talks to me personally outside normal duties . . . . . a b c d e

15. My platoon leader talks to me personally outside normal duties . . . . . a b c d e

16. My company commander talks to me personally outside normal duties . . . . . a b c d e

17. My officers are interested in my personal welfare . . . . . a b c d e

18. My NCOs are interested in my personal welfare . . . . . a b c d e

19. My officers are interested in what I think and how I feel about things . . . . . a b c d e

20. My NCOs are interested in what I think and how I feel about things . . . . . a b c d e

21. I would go for help with a personal problem to people in the company chain-of-command . . . . . a b c d e

22. Officers most always get willing and whole-hearted cooperation from soldiers in this company . . . . . a b c d e

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
a	b	c	d	e

23. NCOs most always get willing and whole-hearted cooperation from soldiers in this company . . . . . a b c d e

24. Outside normal company duties, soldiers in my company would do most anything for their officers . . . . . a b c d e

25. Outside normal company duties, soldiers in my company would do most anything for their NCOs . . . . . a b c d e

26. There is a lot of teamwork and cooperation among soldiers in my company . . . . . a b c d e

27. People in this company feel very close to each other . . . . . a b c d e

28. Most of the people in this company can be trusted . . . . . a b c d e

29. In this company, people really look out for each other . . . . . a b c d e

30. The NCOs in this company really seem to know their stuff . . . . . a b c d e

31. As time goes on, people in this company will get even tighter . . . . . a b c d e

32. In this company, you don't have to watch your belongings . . . . . a b c d e

33. My closest friendships are with the people I work with . . . . . a b c d e

34. I spend my after-duty hours with people in this company . . . . . a b c d e

35. I spend a lot of time with members of my platoon after duty hours . . . . . a b c d e

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
a	b	c	d	e

36. I can go to most people in my squad for help when I have a personal problem . . . . . a b c d e

37. I can go to most people in my platoon for help when I have a personal problem . . . . . a b c d e

38. Most people in my squad would lend me money in an emergency . . . . . a b c d e

39. Most people in my platoon would lend me money in an emergency . . . . . a b c d e

40. The NCOs in this company would lead well in combat . . . . . a b c d e

41. My unit is better than other units in getting the job done . . . . . a b c d e

42. This company is one of the best in the US Army . . . . . a b c d e

43. I am proud of my company . . . . . a b c d e

44. I really feel that I belong in my company . . . . . a b c d e

45. I like being in this company . . . . . a b c d e

46. My company will play a part in winning future conflicts . . . . . a b c d e

47. I think this company would do a better job in combat than most other Army units . . . . . a b c d e

48. The equipment of the American Army is better than that of the Russian Army . . . . . a b c d e

49. I have a lot of confidence in our weapons . . . . . a b c d e

50. I have real confidence in our company's ability to use our weapons . . . . a b c d e

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
a	b	c	d	e

51.	I think the level of training in this company is very high	a	b	c	d	e
52.	I think we are better trained than most other companies in the Army	a	b	c	d	e
53.	Soldiers in this company have enough skills that I would trust them with my life in combat	a	b	c	d	e
54.	If we went to war tomorrow, I would feel good about going with my squad.	a	b	c	d	e
55.	If we went to war tomorrow, I would feel good about going with my platoon	a	b	c	d	e
56.	I am proud to be in the Army	a	b	c	d	e
57.	I am an important part of my company	a	b	c	d	e
58.	What I do in the Army is worthwhile	a	b	c	d	e
59.	If I have to go into combat, I have a lot of confidence in myself	a	b	c	d	e
60.	On the whole, the Army gives me a chance to "be all I can be."	a	b	c	d	e
61.	The officers in this company would lead well in combat	a	b	c	d	e
62.	The officers in this company really seem to know their stuff	a	b	c	d	e
63.	Officers in my company are the kind I would want to serve under in combat	a	b	c	d	e
64.	My chain-of-command works well	a	b	c	d	e
65.	My platoon leader knows his stuff	a	b	c	d	e
66.	My platoon sergeant knows his stuff	a	b	c	d	e

Strongly Disagree	Disagree	Can't say	Agree	Strongly Agree
a	b	c	d	e

67. My squad leader knows his stuff . . . . . a b c d e

68. My leaders are better than the leaders of other units . . . . . a b c d e

69. I am impressed by the quality of leadership in this company . . . . . a b c d e

70. I have enough time to take care of my personal needs such as going to medical appointments, commissary shopping, going to the cleaners, getting a haircut, and things like that . . . . . a b c d e

71. I have enough time for relaxation and entertainment . . . . . a b c d e

72. I have enough time to spend with family members and friends . . . . . a b c d e

73. I want to spend my entire enlistment in this company (officers do not answer this item) . . . . . a b c d e

PART III

Answer the next two questions as indicated.

74. How would you describe the relationship between officers and the enlisted in your unit?
   a. Very Good
   b. Good
   c. So-So
   d. Bad
   e. Very Bad

75. How would you describe the condition of your unit's major weapons systems (tanks, APCs, and so forth)? In other words, what kind of shape are they in?
   a. Very Good
   b. Good
   c. So-So
   d. Bad
   e. Very Bad

Answer questions 76 through 92 using the following response set.

VERY HIGH	HIGH	MODERATE	LOW	VERY LOW
a	b	c	d	e

76. How would you describe your unit's togetherness, or how "tight" are members of your unit? . . . . . a b c d e

77. How would you describe your unit's readiness for combat? . . . . . a b c d e

78. How would describe your fellow soldiers' readiness to fight if and when it is necessary? . . . . . a b c d e

79. How much confidence do you have in your unit's major weapons systems (tanks, APCs, and so on)? . . . . . a b c d e

80. In the event of combat, how would you describe <u>your confidence</u> in your squad members? . . . . . a b c d e

81. In the event of combat, how would you describe <u>your confidence</u> in yourself? . . . . . a b c d e

VERY HIGH	HIGH	MODERATE	LOW	VERY LOW
a	b	c	d	e

82. How would you rate your own skills and abilities as a soldier (using your weapons, operating and maintaining your equipment, and so on)? . . . . . a b c d e

83. In the event of combat, how would you describe <u>your confidence</u> in your company commander? . . . . . a b c d e

84. How much confidence do you have in your Battalion Commander? . . . . . a b c d e

85. How much confidence do you have in your Brigade Commander? . . . . . a b c d e

86. How much confidence do you have in your Division Commander? . . . . . a b c d e

87. How much confidence do you have in your Corps Commander? . . . . . a b c d e

88. How much confidence do you have in the Army General staff? (HQDA). . . . . a b c d e

89. What is the level of morale . . . . . a b c d e in your unit?

90.What is the level of your own . . . . . a b c d e personal morale?

91.In the event of combat, how would you describe <u>your confidence</u> in your platoon leader? . . . . . a b c d e

92.In the event of combat, how would you describe <u>your confidence</u> in your squad members? . . . . . a b c d e

PART V

93. First-termers in this platoon uphold and support Army values.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

94. Leaders in this platoon set the example for Army values.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

95. First termers trust each other in this platoon.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

96. First termers in this platoon care about each other.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

97. How well do first termers in your platoon work together to get the job done?
   a. Very Well
   b. Well
   c. Borderline
   d. Poorly
   e. Very Poorly

98. First termers in this platoon pull together to perform.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

99. Leaders in this platoon trust each other.
   a. Strongly Agree
   b. Agree
   c. Borderline
   d. Disagree
   e. Strongly Disagree

100. Leaders in this platoon care about each other.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

101. First termers in this platoon can get help from their leaders on personal problems.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

102. Leaders and first termers in this platoon care about one another.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

103. Leaders and first termers in this platoon train well together.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

104. Leaders in this platoon have the skills and abilities to lead first termers into combat.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

105. First termers in this platoon know what is expected of them.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

106. In this platoon the behaviors that will get you in trouble are well known.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

107. First termers in this platoon feel they play an important part in accomplishing the unit's mission.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

108. First termers are proud to be members of this platoon.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

109. How satisfied are the first termers in this platoon with the time available for family, friends and personal needs?
    a. Very Satisfied
    b. Slightly Satisfied
    c. Borderline
    d. Slightly Dissatisfied
    e. Very Dissatisfied

110. How satisfied are the first termers in this platoon with the unit social events?
    a. Very Satisfied
    b. Slightly Satisfied
    c. Borderline
    d. Slightly Dissatisfied
    e. Very Dissatisfied

111. First termers in this platoon feel they are serving their country.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

112. First termers in this platoon have opportunities to better themselves.
    a. Strongly Agree
    b. Agree
    c. Borderline
    d. Disagree
    e. Strongly Disagree

113. How long have you been in your present team or section?
    a. 1 - 3 months
    b. 4 - 6 months
    c. 7 - 9 months
    d. 10 - 12 months
    e. more than 12 months

114. How long have you been in your present platoon?
    a. 1 - 3 months
    b. 4 - 6 months
    c. 7 - 9 months
    d. 10 - 12 months
    e. more than 12 months

115. How long have you been in your present company?
    a. 1 - 3 months
    b. 4 - 6 months
    c. 7 - 9 months
    d. 10 - 12 months
    e. more than 12 months

116. How many <u>different</u> squad leaders have you had since you have been assigned to this squad or section? I have had:
    a. the same squad leader all along
    b. two different squad leaders
    c. three different squad leaders
    d. four or more different squad leaders

117. How many <u>different</u> squad leaders have you had since you have been assigned to this platoon? I have had:
    a. the same squad leader all along
    b. two different squad leaders
    c. three different squad leaders
    d. four or more different squad leaders

118. How many <u>different</u> platoon sergeants have you had since you have been assigned to this platoon? I have had:
    a. the same platoon sergeant all along
    b. two different platoon sergeants
    c. three different platoon sergeants
    d. four or more different platoon sergeants

119. How many <u>different</u> platoon leaders (lieutenants) have you had since you have been assigned to this platoon? I have had:
    a. the same platoon leader all along
    b. two different platoon leaders
    c. three different platoon leaders
    d. four or more different platoon leaders

120. How many different company commanders have you had since you have been assigned to this company? I have had:

a. the same company commander all along
b. two different company commanders
c. three different company commanders
d. four or more different company commanders

121. How many different first sergeants have you had since you have been assigned to this company? I have had:

a. the same first sergeant all along
b. two different first sergeants
c. three different first sergeants
d. four or more different first sergeants

122. Which of the following best describes your situation? I have worked with 75% of the men in my squad for:

a. 1-3 months.
b. 4-6 months.
c. 7-9 months.
d. 10-12 months.
e. more than 12 months

123. Which of the following best describes your career intentions at the present time?

a. I will probably stay in the Army until retirement.
b. I will probably reenlist upon completion of my present obligation but am undecided about staying until retirement.
c. I am undecided whether I will reenlist.
d. I will probably leave the Army upon completion of my present obligation.
e. I will probably leave the Army before completion of my present obligation.

APPENDIX 2

Cross-reference Chart for the PCI and SS.

PCI	SS
Item 1	Item 93
Item 2	Item 94
Item 3	Item 95
Item 4	Item 96
Item 5	Item 97
Item 6	Item 98
Item 7	Item 99
Item 8	Item 100
Item 9	Item 101
Item 10	Item 102
Item 11	Item 103
Item 12	Item 104
Item 13	Item 105
Item 14	Item 106
Item 15	Item 107
Item 16	Item 108
Item 17	Item 109
Item 18	Item 110
Item 19	Item 111
Item 20	Item 112
Item 21	Item 113
Item 22	Item 114
Item 23	Item 115
Item 24	Item 116
Item 25	Item 117
Item 26	Item 118
Item 27	Item 119
Item 28	Item 120
Item 29	Item 121
Item 30	Item 122
Item 31	Item 123

Table 1.
LEADERSHIP FOR THE NINETIES COURSE EVALUATION: COHORT BATTALION

	PERCENT STUDENTS BY RESPONSE OPTION				
MODULES	1	2	3	4	5
1. SELF KNOWLEDGE	0	3	4	58	40
2. COMMUNICATION SKILLS	0	1	4	43	49
3. TEAM BUILDING	0	1	5	41	53
4. LEADERSHIP BEHAVIOR	0	1	8	55	34
5. ROLE CLARIFICATION	0	4	15	41	40
6. UNIT GOAL SETTING	0	1	9	42	47
7. ROLE RELATIONSHIPS	0	3	12	49	37
8. PROBLEM SOLVING	0	1	3	33	63
9. ACTION PLANNING	0	1	11	32	57
10.AFTER ACTION REVIEWS	0	0	4	33	61

Note. Ratings were based on a 5 point Likert scale (1=Totally Ineffective; 2=Ineffective; 3= Do Not Know; 4=Adequate; 5=Very Effective).

Table 2.
LEADERSHIP FOR THE NINETIES COURSE EVALUATION: STUDENT TRAINERS FROM LIGHT FIGHTER SCHOOL

	PERCENT OF STUDENT BY RESPONSE OPTION				
MODULES	1	2	3	4	5
1. SELF KNOWLEDGE	0	0	6	50	44
2. COMMUNICATION SKILLS	0	0	0	31	69
3. TEAM BUILDING	0	0	0	56	44
4. LEADERSHIP BEHAVIOR	0	0	13	44	44
5. GOAL SETTING	0	6	13	25	56
6. ROLE CLARIFICATION	0	0	0	19	81
7. ROLE RELATIONSHIPS	0	0	7	60	33
8. PROBLEM SOLVING	0	0	0	50	50
9. ACTION PLANNING	6	6	13	31	44
10.AFTER ACTION REVIEWS	0	0	14	43	43

Table 3.
Factor Loadings Comprising Composite Cohesion Scores

Items	Loadings
Factor 1, Horizontal Bonding	
Item 95 First termers trust each other	.72
Item 96 First termers care about each other	.76
Item 97 First termers work together	.73
Item 98 First termers pull together to perform	.68
Factor 2, Vertical and Leader Bonding	
Item 99 Leaders in this platoon trust each other	.82
Item 100 Leaders in this platoon care about each other	.83
Item 102 Leaders and first termers in this platoon care about one another'	.62
Factor 3, Confidence in Unit and Leaders	
Item 94 Leaders in platoon set the example for Army values	.52
Item 103 Leaders and first-termers in this platoon train well together	.63
Item 104 Leaders in this platoon have skills and abilities to lead first-termers into combat	.55
Item 105 First-termers in this platoon know what is expected of them	.65
Item 107 First-termers in this platoon feel they play an important part in accomplishing the unit's mission	.59

Table 4.

JULY FACTOR ANALYSIS OF THE PSYCHOLOGICAL READINESS SUBSCALE:
(Items 13 through 92 of the SOLDIER SURVEY)
N=628 (both COHORT and non-COHORT Battalions)
Varimax Rotation

FACTOR 1	GENERAL READINESS (29%)	
Q44	I feel I belong in my company	.80
Q46	My company will play part in winning future conflicts	.79
Q43	I am proud to be part of my co.	.79
Q45	I like being in this company	.77
Q42	This co. is one of best in US Army	.75
Q47	This co. would do better in combat than most	.73
Q52	We are better trained than most other co.s in Army	.56
Q73	I want to spend my entire enlistment in this co.	.55
Q50	I have confidence in co.'s ability to use weapons	.54
Q41	My unit better than others in getting the job done	.54
Q77	Unit combat readiness	.52
Q69	Impressed w/quality of company leadership	.51
FACTOR 2	CONFIDENCE IN HIGHER LEVEL LEADERS/MANAGEMENT (6%)	
Q87	Confidence in Corps Commander	.89
Q85	Confidence in Brigade Commander	.84
Q86	Confidence in Division Commander	.82
Q88	Confidence in HQDA	.81
Q84	Confidence in Battalion Commander	.67
FACTOR 3	VERTICAL BONDING/AFFECTIVE (5%)	
Q20	NCOs interested in what I think & feel	.76
Q18	NCOs interested in my personal welfare	.75
Q13	Superiors treat me as a person	.68
Q21	Go to co. chain-of-command w/personal problem	.64
Q19	Officers interested in what I think & feel	.60
Q17	Officers interested in my personal welfare	.56
FACTOR 4	READINESS TO FIGHT (4%)	
Q92	Confidence in squad members in combat	.66
Q80	Confidence in squad members in combat	.63
*Q78	Fellow soldiers readiness to fight	.60
Q54	Feel good abt. going to war w/my squad	.55
Q90	Level of personal morale	.54
*Q89	Level of unit morale	.54
Q55	Feel good about going to war w/ my platoon	.51

Table 4 continued.

FACTOR 5 "HORIZONTAL BONDING (AFFECTIVE)" (4%)		
Q28	Most of people in company can be trusted	.77
Q27	People in company feel close	.71
Q29	People look out for ea. other in this company	.70
Q26	Teamwork/cooperation in my company	.61
FACTOR 6 CONFIDENCE IN IMMEDIATE LEADERSHIP (3%)		
Q65	Platoon leader knows his stuff	.85
Q91	Confidence in platoon leader in combat	.79
Q62	Officers in co. know their stuff	.59
Q63	Officers in co. are kind want to serve in combat	.57
FACTOR 7 HORIZONTAL BONDING/TRUST FOR HELP (3%)		
Q38	People in squad would lend me $ in emergency	.75
Q36	Can go to squad members w/personal problem	.74
Q39	People in platoon wld. lend me $ in emergency	.67
Q37	Go to people in platoon w/personal problem	.61
FACTOR 8 SELF CONFIDENCE (3%)		
Q81	Confidence in self in combat	.80
Q82	Rate own skills/abilities as soldier	.78
Q59	Self-confidence in combat	.73
FACTOR 9 CLIMATE (2%)		
Q71	Enough time for relaxation/entertainment	.83
Q70	Enough time for personal needs	.78
Q72	Enough time for family/friends	.77
FACTOR 10 COMRADERIE (2%)		
Q35	Spend off-duty time w/platoon members	.80
Q34	Spend off-duty time w/company members	.80
Q33	Closest friendships w/co-workers	.66
FACTOR 11 MORALE (2%)		
Q51	Level of training in company is very high	.54
Q60	Army let's me "be all I can be"	.52
Q58	What I do in army is worthwhile	.51
Q57	I am important part of my co.	.46
*Q52	Better trained than most companies	.49

Table 4 continued.

FACTOR 12 (2%)		
Q74	Relationship between officers & enlisted in your unit	.67
Q61	Officers in company would lead well in combat	.49
FACTOR 13 LOYALTY TO IMMEDIATE LEADERS		
Q23	NCOs get cooperation from soldiers in company	.69
Q22	Officers get cooperation from soldiers in co.	.64
Q25	Soldiers in co. would do almost anything for NCOs	.53
Q24	Soldiers in co. would do almost anything for officers	.53
FACTOR 14 CONFIDENCE IN WEAPONS		
Q75	Condition of unit major weapons systems	.71
Q79	Confidence in unit major weapons systems	.64
Q48	Equipment of American Army better than Russian Army	.73
Q49	Confidence in our weapons	.64
FACTOR 15		
Q16	Company Commander talks to me personally	.61
Q14	Platoon sergeant talks to me personally	.66

Note. An (*) designates items with moderate loadings on more than one factor.

Table 5a.
Intercorrelation of March Cohesion Composites: COHORT Soldiers.

	HB	VB	OB
HB	1.00 ***	.48 ***	.56 ***
VB	.48 ***	1.00 ***	.67 ***
OB	.56 ***	.67 ***	1.00 ***

Note. A triple asterisk (***) indicates an alpha of .000.
N=299 to 300.

KEY. HB=Horizontal Bonding (F1); VB=Vertical Bonding (F2)
OB=Organizational Bonding (F3).

Table 5b.
Intercorrelation of March Cohesion Composites: COHORT Squads.

	HB	VB	OB
HB	1.00 ***	.49 **	.53 ***
VB	.49 **	1.00 ***	.73 ***
OB	.53 ***	.73 ***	1.00 ***

Note. A triple asterisk (***) indicates an alpha of .000. A double asterisk (**) indicates an alpha of .001.
N=46 Squads.

KEY. HB=Horizontal Bonding (F1); VB=Vertical Bonding (F2)
OB=Organizational Bonding (F3).

Table 6.
Intercorrelation Matrix for the July Cohesion and Psychological Readiness Composites: COHORT

	HB	VB	OB
PR1	.54 p<.000	.46 p<.000	.55 p<.000
PR2	.39 p<.000	.48 p<.000	.58 p<.000
PR3	.38 p<.000	.54 p<.000	.49 p<.000
PR4	.67 p<.000	.54 p<.000	.66 p<.000
PR5	.57 p<.000	.36 p<.000	.38 p<.000
PR6	.39 p<.000	.49 p<.000	.58 p<.000
PR7	.50 p<.000	.43 p<.000	.33 p<.000
PR8	.33 p<.000	.33 p<.000	.48 p<.000
PR9	.26 p<.000	.24 p<.000	.27 p<.000
PR10	.28 p<.000	.21 p<.002	.14 p<.04
PR11	.45 p<.000	.50 p<.000	.68 p<.000
PR12	.32 p<.000	.39 p<.000	.49 p<.000
PR13	.40 p<.000	.41 p<.000	.41 p<.000
PR14	.30 p<.000	.42 p<.000	.48 p<.000
PR15	.16 p<.01	.17 p<.01	.19 p<.003

KEY: HB=Horizontal Bonding; VB=Vertical Bonding; OB=Organizational Bonding.

Note. Valid N ranged from 220 to 221.